Night vision assistant

The night vision assistant is an assistance system for the larger model series from Audi. The heart of this system is a thermal imaging camera at the front of the vehicle. It has an angle of view of 24 degrees, and its protective window is cleaned by a separate nozzle and heated when cold. As a far infrared system (FIR), the camera reacts to the heat radiated by objects in the recorded scene. A computer transforms the information from the camera into black-and-white images and displays them on the central display located between the instruments.

The far infrared technology has significant strengths, particularly when compared to the competing near infrared systems. It can look up to 300 meters (984.25 ft) ahead, far beyond the range of the high beams, and is not blinded by headlights and similar light sources. Most importantly, it concentrates on what is most important: people. Regardless of whether they appear bright or dark to the human eye, they are conspicuously bright in the image due the heat they give off, whereas the cooler surroundings appear dark.

The image processing software can detect persons at a range of approximately 100 meters (328.08 ft). When analyzing the data, it specifically seeks out human contours and objects that are bright and round – their heads, in other words. Detected persons are highlighted with a yellow marking on the display. If the control unit predicts a hazard because a person is walking on the road close to the car, for example, the person is marked in red and a warning gong sounds. A warning also appears in the optional head-up display.

The marking, the gong, and image contrast can be configured via the MMI. Like every assistance system, the night vision assistant also works within certain system limitations. Highlighting of detected pedestrians is switched off at air temperatures above 28 degrees Celsius (82 degrees Fahrenheit), for example.

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